

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
4 August 2005 (04.08.2005)

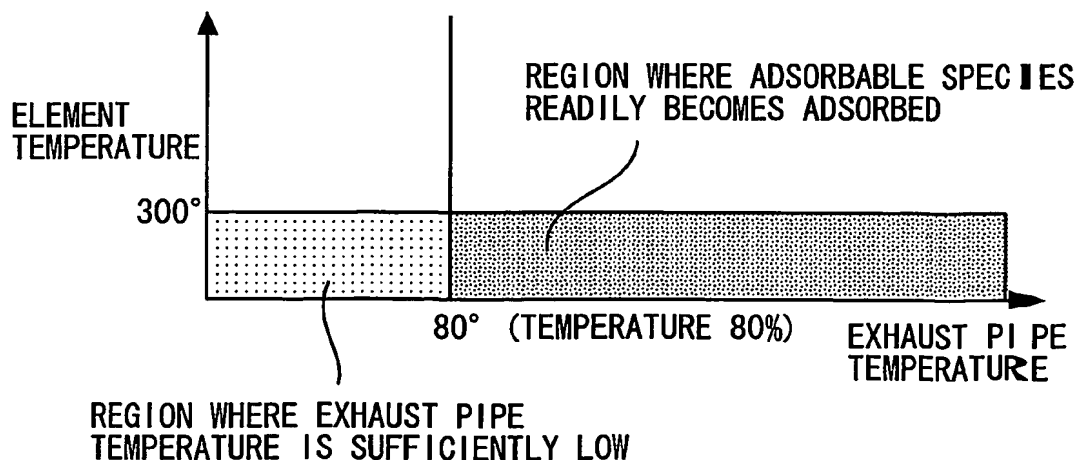
PCT

(10) International Publication Number  
**WO 2005/071247 A1**

- (51) International Patent Classification<sup>7</sup>: **F02D 41/14**, 41/06, 35/00
- (21) International Application Number:  
PCT/JP2004/018769
- (22) International Filing Date: 9 December 2004 (09.12.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
2004-015759 23 January 2004 (23.01.2004) JP
- (71) Applicant (for all designated States except US): **TOYOTA JIDOSHA KABUSHIKI KAISHA [JP/JP]**; 1, Toyota-cho, Toyota-shi, Aichi 4718571 (JP).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **AOKI, Keiichiro [JP/JP]**; c/o TOYOTA JIDOSHA KABUSHIKI KAISHA, 1, Toyota-cho, Toyota-shi, Aichi 4718571 (JP).
- (74) Agents: **TAKAHASHI, Hideki et al.**; TAKADA, TAKAHASHI & PARTNERS, 5th Floor, Intec 88 Bldg., 20, Araki-cho, Shinjuku-ku, Tokyo 1600007 (JP).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:  
— with international search report

[Continued on next page]

(54) Title: CONTROL SYSTEM FOR EXHAUST GAS SENSOR



(57) Abstract: An oxygen sensor is mounted in an exhaust path of an internal combustion engine. The status of an exhaust gas is detected in accordance with the output of the oxygen sensor. The oxygen sensor incorporates a heater for heating an element of the sensor. In a region in which the temperature of the sensor element is below 300°C, an adsorbable species becomes adsorbed. In a region in which the exhaust pipe temperature is above 80°C, the adsorbable species becomes adsorbed remarkably. Power supply control is continuously exercised over the heater so as to maintain the sensor element at a temperature of 300°C or higher until the exhaust pipe temperature drops below 80°C after an internal combustion engine stop. The power supply to the heater is shut off after the exhaust pipe temperature drops below 80°C.



---

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*